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TITLE : POWDERY TRANSNASAL PREPARATION CONTAINING GRANULOCYTE COLONY STIMULATION FACTOR (G-CSF)

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Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu
 -1  +1              5                  10                  15
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu
                20                  25                  30
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu
            35                  40                  45
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser
        50                  55                  60
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His
    65                  70                  75
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile
 80                  85                  90                  95
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala
                100                 105                 110
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala
            115                 120                 125
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala
        130                 135                 140
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser
    145                 150                 155
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro
160                 165                 170
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ABSTRACT : PURPOSE: To provide a granulocyte colony-stimulating factor (G-CSF)-containing transnasal powdery preparation which contains G-CSF and saccharides and can allow the patients to safely absorb G-CSF through the nasal mucosa efficiently, thus is effective for treating dyshematopiosia or a chemical therapy or radioactive therapy therefor and on bone marrow transplantation.

CONSTITUTION: This pharmaceutical preparation comprises (A)G-CSF (for example, a polypeptide having the amino acid sequence of the formula and a human G-CSF activity, or a glycoprotein having a saccharide chain linked to the polypeptide, (B) a saccharide such as mannitol, lactose or the like, further, when needed, (C) a carboxyvinyl polymer, polyvinyl pyrrolidone, a agar powder, arabic gum, gelatin, hyaluronic acid or a salt thereof, hydroxypropyl cellulose or crystalline cellulose and can be transnasally given in a dose of 1-5,00, particularly 5-100μg/kg body weight/day of the component (A).